AVIATION

The Oldest American Aeronautical Magazine

AUGUST 10, 1925 Issued Weekly PRICE 10 CENTS

The Pennsylvania State Capitol, at Harrisburg, looking toward the Susquehanna River

VOLUME XIX

NUMBER 6

SPECIAL FEATURES

AIRLINE COSTS

RESULTS OF THE GERMAN CROSS COUNTRY RACE

THE SPECIAL AIRCRAFT INDUSTRY COMMITTEE

GARDNER PUBLISHING CO., INC.
HIGHLAND, N. Y.
225 FOURTH AVENUE, NEW YORK

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CURTISS AEROPLANE & MOTOR COMPANY, INC.

GARDEN CITY, N. Y. BUFFALO, N. Y.

AUGUST 10, 1925

AVIATION

VOL. XIX. NO. 6

Published every Monday

CONTENTS

Editorials	145	Airline Investment and Operating Costs (Con't)	151
The Special Aircraft Industrial Committee	146	Civil Aviation Survey to be Made	153
Results of the German Cross Country Race	148	Airports and Airways	154
Who's Who in American Aeronautics	150	United States Air Forces	156

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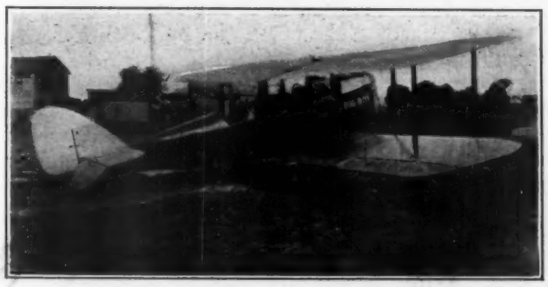

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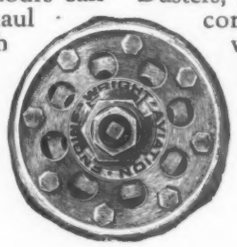

Peru, Brazil, Cuba, Canada and other foreign governments are using Wright Whirlwind Engines. The commercial possibilities of these engines are exemplified in the recent installation of sixteen Whirlwind Engines in the planes of Huff-Daland Dusters, Inc., Georgia, who are taking important contracts for fruit tree and cotton boll weevil dusting. Impartial aeronautical and industrial engineers have decided that a considerable saving can be made by using air-cooled engines.

Bulletin No. 8-A containing a general description and technical information will be forwarded on request.

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Paterson, New Jersey, U. S. A.

WRIGHT J-4, 200 H.P. WHIRLWIND AIR-COOLED ENGINES

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Use and Cost

THERE are so many items entering into the cost of transporting goods by air that there is a tendency to become confused and to forget that the fundamental problems of economics apply to aviation as well as to other forms of transportation. It is obvious that if a railroad should run only two trains a day over its tracks the cost of maintaining the road bed and the necessary office overhead would be such as to make the cost of the ton mile excessively high. In the same way if a railroad only used its rolling stock one hour out of the twenty-four instead of five or six, the cost of operating the equipment would be greatly increased. Although it is equally obvious, many people have not realized that the cost of operating an airplane depends on exactly the same factors.

The general public take the Air Mail figures of cost as being somewhere near the cost of operating an airplane. Actually the Air Mail is maintaining a lighted airway and a series of landing fields from New York to Cheyenne and it is only operating two planes a day. It is just as absurd to consider the present cost of operating the mail planes from New York to Chicago as a commercial cost as it would be to run two mail trains over a railroad and to charge to the operation of these two trains the full cost of the road bed and overhead. Nevertheless there are still people who think that they are finding out something about the costs of airplane operation when they are looking at figures of planes which are only operated half an hour a day. As a matter of fact airplanes can and should be used over five hours a day if the maintenance is systematized. It is obvious then that before the true cost of operating an air route can be obtained, that the volume of traffic must be increased to allow of a greater headway over a given route and that the planes themselves must be used with a reasonable intensity.

If it were not for the short distances covered by most of their airlines, the Europeans would, in theory at least, be in a better position to obtain the true cost of operating airplanes than our own Air Mail. On the European airways, especially the London-Paris route there is, due to the government subsidy, a large volume of traffic. A dozen or more airplanes a day take off and land every day at the Croydon and Le Bourget airports. This is not nearly the volume of traffic which these terminals could handle, but it is more than the two planes a day which use our Air Mail facilities. Also the Europeans have not thought it necessary to develop emergency landing fields. They have little night flying equipment. Therefore they have smaller investments in their airways and so do not find it necessary to fly as many planes in order to meet their ground expenses.

Europe seems to have gone further than the United States in developing multi-engined planes and directional wireless. If this combination could be substituted for emergency fields and night lights at intervals of a few miles it would greatly decrease the cost of the ground organization and the necessity of running a large number of planes over the route in order to bring down the cost. The Europeans, and especially the English believe in the intensive utilization of their equipment thus decreasing their capital investment, decreasing depreciation due to ageing and enabling them to substitute modern equipment as rapidly as it is developed.

No one at the present time has accurate figures on the operation of airplanes and it will probably be years before definite cost figures are ascertained.

The Future of Night Flying

WITH the successful operation of the night Air Mail, and now its further expansion to the New York-Chicago route, it is interesting to look ahead a little, toward the probable future development. That night operation is a requirement for any large scale commercial transportation, must be universally acknowledged. That air traffic will on the whole increase, must be a matter of complete confidence to those who are promoting the present development.

Assuming these inescapable premises, the time will very likely come when traffic over the longer routes will have grown to such proportions that airships may be much more economical than airplanes. Now it happens to be one of the qualities of airships, that they require no lighted airway or any right of way whatever along the route. In fact, a large commercial airship would probably make no direct use of a lighted airway, already in existence.

The most efficient system of airship operation on a long route is not to navigate with any reference to a prearranged route over the ground, but rather to choose such a route as will yield the most help, and the least hindrance, from winds and weather. In other words, airship navigation from the layman's point of view is simply a matter of leaving one terminal and arriving at another, with no intermediate stops and with no fixed route.

It is possible, however, and may be perfectly feasible to take on and discharge loads en route. For this purpose the most practical method so far demonstrated, seems to be the temporary hooking-on and releasing of airplanes. In any case, airplanes will be necessary to take care of the shorter hauls and smaller loads, hence there is no reason to believe that the present lighted airways will ever become obsolete, although their cost must eventually be applied, with some discretion, to the particular classes of vehicles which profit from their use. For the main terminals, facilities suitable for both types of aircraft will be necessary.

The Special Aircraft Industry Committee

Its Inception, Plan and Achievements

The work of the Special Aircraft Industry Committee will have such an important effect on the whole trend of the dealings of the aeronautical industry with the government that the complete history and achievements of this committee should be recorded. Ever since the War, the aeronautical industry has been uncertain as to the policy relating to its dealings with the government. This uncertainty has not had a good effect on the industry, nor has it been conducive to the government securing the best results. During the five years since the War there has been no gathering at which all the representatives of the industry have been invited and met to discuss the problems that were general to the industry on a whole.

The Idea of the Meeting

The calling of the meeting by the publisher of AVIATION was explained by him to the Lampert Committee in the following words: "The luncheon that I gave to the various units of the aeronautical industry was upon my personal invitation. Before sending the invitation, I consulted with no one in the aeronautical industry. Giving the luncheon was prompted by the feeling that there had been no complete meeting of all the units of the industry since the War, and as I knew practically every unit personally, I thought I could use my acquaintanceship to the advantage of all, in this way.

"Every unit in the industry that was manufacturing aircraft in any appreciable quantities and with whom I had personal acquaintance was invited. To have a speaker, who would have an interesting point of view, I asked Mr. Will Hays, with whom I had not been previously well acquainted, to talk to the industry about the advantages to be gained by a free discussion of the industry's problems, giving his experience with the motion-picture industry.

"All of the units of the industry were represented, except Douglas and Cox Klemin who could not come (but joined later).

"After Mr. Hays had spoken of the advantages of meetings within any industry, he offered to meet with a committee of the aeronautical industry and give it any information that he had as to the advantages that had been gained by such gatherings in the motion-picture industry.

"My calling of the luncheon had nothing whatever to do with the special committee (Lampert) investigation or any other outside influence. It was a personal effort to get the many interests together in a common effort, with the hope that there might be unanimity and that a better understanding among them might result in good."

The Call of the Meeting

In November, 1924 the invitation to a luncheon to be held in New York early in December was sent to all units of the aeronautical industry. Summarized, it was as follows::

The aircraft industry of the United States needs a Judge Landis or a Will Hays to direct its future, to settle its differences and to represent it in Washington. As one vitally interested in the future growth of the industry and who has had the advantage of close association with aircraft manufacturers and government officials, the above suggestion is made as a concrete solution of the present unsettled condition of the industry.

To bring this matter to a point where it may be considered independently of any other consideration, you are invited with other manufacturers to discuss the feasibility of the above suggestion. The willingness of the manufacturers to meet as individuals to discuss this matter will in no way commit them to this plan. Perhaps even a better one can be secured, but such a meeting will indicate a desire on the part of constructors to listen to a suggestion at this critical time.

The plan has not been discussed with any manufacturer. The reasons that have prompted this suggestion are so timely that they must be obvious. There will probably be more orders given during the next year for new aircraft than at any time since the War. The allocation of this business by the Air Services is the greatest problem that confronts the officers to-day.

The above suggestion would not interfere with the present organizations in the industry. They have their functions but they cannot be used for the purpose of direction. Their work is along other well defined lines.

The geographical location of the units of the aircraft industry make frequent meetings difficult. With a director in Washington in whom everyone has confidence, there would gradually come a condition where meditation and conciliation would take the place of disastrous competitive backbiting.

From the standpoint of the government the suggestion should be welcomed. There would then be an impartial adviser who could be called upon to assist in the preparation of the plans and also in the allocation of orders.

If some such plan is not devised, the present difficult situation may be corrected by drastic regulations which will not have the elasticity of the director-ship plan. That the country intends to have a solid and competent aircraft industry on which it can rely for satisfactory aircraft is evident.

Those Present at the Luncheon

The Aircraft Year Book for 1925 gives the following account of the luncheon:

"At this point, Maj. L. D. Gardner, publisher of AVIATION, who, as a former Air Service officer, possessed sympathetic understanding of the whole problem, took the initiative and invited aircraft and engine constructors to a luncheon on Dec. 1, 1924, at the University Club, New York. To this conference he also invited Hon. Will H. Hays, President of the Motion Picture Producers and Distributors of America, and Frank C. Schmitz, General Manager of the Mahogany Association. Both Messrs. Hays and Schmitz had had experience, in their respective industries, along lines somewhat similar to those encountered by the aircraft manufacturers. In addition, Mr. Hays, as Postmaster General at a time when the Air Mail Service was reorganized to its present efficient and expanding basis, possessed a rather intimate knowledge of the situation in its broader aspects. There were present at this original conference, the following:"

Inglis M. Uppercu, President, Aeromarine Plane & Motor Co.
Carl B. Fritsche, General Manager, Aircraft Development Corp.
Lorillard Spencer, President, Atlantic Aircraft Corp.
J. L. Callan and Beckwith Havens, Airships Incorporated.
Edgar N. Gott, President, Boeing Airplane Co.
Reuben H. Fleet, President, Consolidated Aircraft Corp.
C. M. Keys, President, and F. H. Russell, Vice-President, Curtiss Aeroplane & Motor Co.
A. J. Elias, President, G. Elias & Bros., Inc.
C. F. Stone, Goodyear-Zeppelin Corp.
Sidney Newburg, Huff Daland & Co.
A. P. Loening, Vice-President, Loening Aeronautical Engineering Corp.
Glenn L. Martin, President, Glenn L. Martin Co.
L. M. Woolson, Packard Motor Car Co.
Raymond Ware, Secretary, Thomas-Morse Aircraft Corp.
Chance Vought, Chance Vought Corp.
Charles L. Lawrance, Vice-President, Wright Aeronautical Corp.
S. S. Bradley, General Manager, Aeronautical Chamber of Commerce.
Lester D. Gardner, Publisher, AVIATION.
Earl D. Osborn, Vice-President, Gardner Publishing Co.
George Newbold, Business Manager, AVIATION.

Following the talks by Mr. Hays and Mr. Schmitz, Mr. Gardner read the aircraft part of the message of the President transmitting the Budget and suggested the appointment of a special committee to consider the future policy of the aeronautical industry. He said that Mr. Hays had expressed a willingness to meet with the committee and give them any assistance he could. After a general discussion of the problems confronting the industry, it was unanimously decided that the time had come for the industry to work together in greater sympathy and, to this end, a Special Committee of the Aircraft Industry should be appointed. The following committee was thereupon chosen: C. B. Fritchie, A. P. Loening, Glenn L. Martin, F. H. Russell, Chance Vought and Charles L. Lawrance. S. S. Bradley was chosen Secretary of the Committee. The committee immediately organized and chose Mr. Lawrance as Chairman.

Adopts Resolution

A second meeting was held at which the following resolution was adopted:

WHEREAS, the President of the United States, in his Message to the Congress transmitting the Budget, has said:

"Aside from the important factor of training personnel, our National Defense is largely an industrial problem. Today the outstanding weak-

ness in the industrial situation as it affects National Defense, is the inadequacy of the facilities to supply air service needs. The airplane industry in this country at the present time is dependent almost entirely upon Government business. To strengthen this industry is to strengthen our National Defense;" and

WHEREAS, the Aircraft Industry, sensing its duty in this regard, purposes fullest co-operation to that end.

NOW, THEREFORE, BE IT RESOLVED, that we, the undersigned, representing the Aircraft Industry in the United States of America, proceed immediately to the consideration of what should be done to enable us to ascertain and develop a sounder policy within the Aeronautical Industry, so that closer co-operation between the Government and the Industry may obtain through relations of such character and on such a sound basis as will permit the safe and economical expansion of the industry and the development of military and commercial aeronautics, and thus provide the essential nuclei for production of service types for the National Defense and Emergencies.

To this resolution the following units in the aircraft industry gave their complete endorsement; signatures being by the officials named:

Aeromarine Plane & Motor Co., Keyport, N. J. Inglis M. Uppercu, President.
Aircraft Development Corp., Detroit, Mich. C. B. Fritsche, General Manager.
Airships Incorporated, Hammondsport, N. Y. J. L. Callan, President.
Atlantic Aircraft Corp., Hasbrouck Heights, N. J. Lorillard Spencer, President.
Boeing Airplane Co., Seattle, Wash. E. N. Gott, President.
Vincent J. Burnelli, New York. Vincent J. Burnelli.
Consolidated Aircraft Corp., Buffalo, N. Y. R. H. Fleet, President.
Cox-Klemin Aircraft Corp., Baldwin, L. I. L. Charles Cox, President.
Curtiss Aeroplane & Motor Co., Garden City, L. I. F. H. Russell, Vice-President.
Douglas Company, Santa Monica, Calif. Donald W. Douglas, President.
G. Elias & Bro., Inc., Buffalo, N. Y. A. J. Elias, President.
Goodyear-Zeppelin Corp., Akron, Ohio. Edw. G. Wilmer.
Charles Ward Hall, Inc., New York. Charles Ward Hall.
Huff, Daland & Co., Ogdensburg, N. Y. Thomas H. Huff, President.
Johnson Airplane & Supply Co., Dayton, Ohio. J. M. Johnson.
Loening Aeronautical Engineering Corp., New York. A. P. Loening, Vice-President.
Glenn L. Martin Co., Cleveland, Ohio. Glenn L. Martin, President.
Packard Motor Car Co., Detroit, Mich. J. G. Vincent.
Lawrence Sperry Aircraft Corp., Farmingdale, L. I. Robert Simon, Secretary.
Stout Metal Airplane Co., Detroit, Mich. William B. Stout, General Manager.
Chance Vought Corp., Long Island City, L. I. Chance M. Vought, Assistant Treasurer.
Wright Aeronautical Corp., Paterson, N. J. Charles L. Lawrance, Vice-President.

Statement by Mr. Lawrance

A general statement for the consideration of the industry was prepared and submitted. In referring to these suggestions, Mr. Lawrance, the chairman of the Committee has said:

"We recognized that we must stop attacking each other's theories and motives and act on a policy of good faith with regard to each other. The aircraft industry, we call it an industry—it is not an industry—is only an art at the present stage of the game, and competition where bids are asked for and price is the primary consideration is all right in purchasing standard supplies and equipment; but the things that the Government wants to buy are ideas and inventive genius and brains and the articles they really want most may cost much more than another article for which the lowest bid is received.

"At the present time I am told that there are nearly twice as many civilian mechanics and artisans in the Army Air Service and Naval Aircraft Factory as there are in the private aircraft industry. We feel that there is an established industry here and that the government should not necessarily go outside of it.

"We believe the government should have experimental stations, but we do not believe that they should compete with the industry.

"It is the feeling of our Committee that if the report which we have submitted were adopted and made part of a national policy, that the aircraft industry would become strong and healthy."

Suggestions by Former Postmaster General Hays

Mr. Hays in referring to the cooperative movement within the aeronautic industry said:

"Preaching commercial aviation, we have failed utterly to develop it... The industry itself has definite duties to perform. *It must be united upon the basis of confidence and co-operation, recognizing that it is not primarily a munitions industry.* It must develop and practice a code of proper conduct squaring always with right principles and calculated to aid itself in the discharge of its duties and the development of its maximum usefulness. The industry itself must give complete and absolute adherence to the design rights principle. It can not be expected that the buyers of aircraft will respect proprietary rights if the manufacturers themselves ignore them. The protection of proprietary rights carries with it the presumption that the industry must maintain competent and active staffs, capable of developing new and progressive types, adjusted to peace-time requirements, yet capable of quick expansion for emergency needs, and each manufacturer must establish and maintain the highest standards of excellence in his product based upon the highest type of engineering and manufacturing skill—and backed by the most rigid and intelligent inspection. There must be competition based upon engineering and designing skill as well as competition of manufacturing ability and price. The manufacturer must take upon himself the responsibility for his products and service. It is as important that aircraft remain sold and capable of operation after sale as it is to sell them. *The industry must immediately direct its best attention and its most consummate skill to the development of types for commercial use, and prove by its performance its faith in its profession that it is not a munitions business; and prove its faith, too, in the future.*"

The Special Committee headed by Mr. Lawrance, met at frequent intervals, a number of times with Mr. Hays. Conferences were arranged with the Secretary of War and the Secretary of the Navy, following which the committee, in response to an invitation from President Coolidge visited the White House for a brief report and discussion of the progress being made. Later, in accordance with the suggestion made at the meetings with the President and Secretaries of War and Navy, the study of specific questions of detail were taken up with the respective services through the Assistant Secretary of War, Col. Dwight F. Davis, and the Assistant Secretary of the Navy, Hon. T. Douglas Robinson.

The committee's labors were dual. They had first to consider policies for the guidance of the aircraft industry, and then to suggest a governmental policy in reference to aircraft development and procurement. Early in 1925 the special committee presented to meetings of the industry as a whole drafts of the two subjects, and late in February and early in March the final text of the industry's policy was formally approved and signed at a general meeting of the industry, and the final text of suggestions for a governmental policy was endorsed by the Assistant Secretaries of War and Navy, in conferences with the special committee, as follows:

Policies for Guidance of Aircraft Industry

1. Each manufacturer shall maintain a spirit of confidence and cordial co-operation in all relations with other manufacturers in the aircraft industry. All differences of opinion or acts constituting a basis for complaint or violation of this principle, shall be at once frankly stated by the complainant to the manufacturer against whom complaint is noted. A manufacturer, upon receiving a complaint from another manufacturer, will at once give it courteous and careful consideration. If the matter complained of can not be promptly composed by the parties immediately interested, the question shall be at once referred to arbitration.
2. Each manufacturer of aircraft, aircraft motors and special aircraft equipment, shall maintain as the basis of satisfactory and progressive development within the industry, capable and efficient staffs and experimental facilities adjusted to the peace time requirements of the Government, yet capable of quick expansion for emergency needs.
3. The "design rights" principle shall be paramount. Each manufacturer will honor the design rights of others. In order to improve the quality and performance of their products and effect economies to the Government, each manufacturer will tend toward specialization in types, so that maximum progress along their several and distinct lines may be realized with the least possible duplication of effort and with competition based upon engineering and designing skill, as well as competition of manufacturing ability and price.
4. The creative facilities of the industry will co-operate in every practicable manner with the engineering departments of the Services, in order to meet as nearly as possible the needs of the Government.
5. Every unit of the industry shall take pride in maintaining the highest standard of excellence of its products and to this end shall maintain the most rigid inspection and control of production in all stages of fabrication. The industry, through a realization of the fact that the responsibility for its products does not end with payment, shall maintain service in the field, in order to secure the successful performance of its products and at the same time provide for progressive development and improvement.
6. Each manufacturer shall accept the principle of sub-contracting within the industry—the creator retaining engineering control and contractural relations with the Government—as a basis of maintaining proper balance of production throughout the industry.

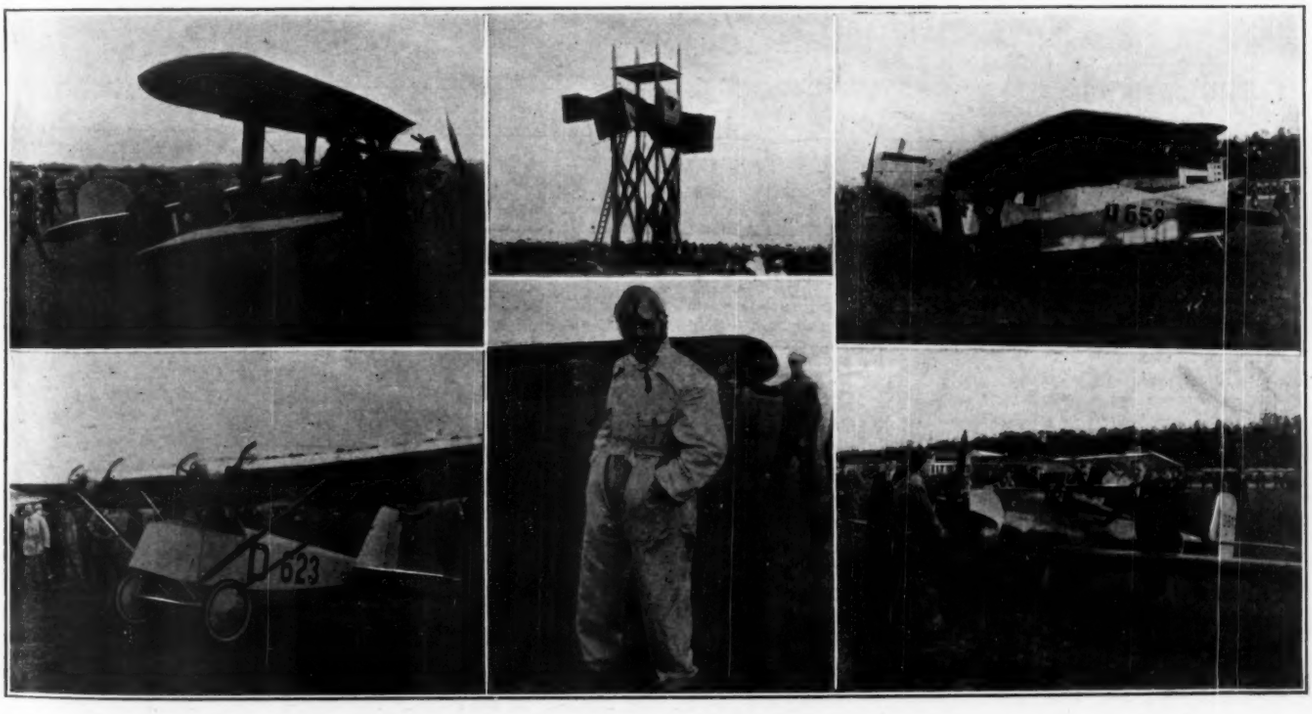
Suggestions for Governmental Policy

1. The Government shall encourage and promote the design and manufacture, by other than Government agencies, of aircraft, aircraft engines and equipment. The Government shall not engage in such work in competition with the aeronautical industry.
2. The Government shall recognize and sustain the principle of proprietary design rights applied to all aeronautical material.
3. The Government will not purchase or acquire the design rights for aircraft, aircraft engines or accessories when these are the products of established manufacturers.
4. The Government will not purchase aircraft, aircraft engines or accessories of new design until after the actual articles have been presented for test, nor until said articles have demonstrated their superiority over existing and accepted standard types, unless the design project is of such magnitude as to demand Government assistance in its development.
5. The Government shall avail itself as much as practicable of the facilities of the industry for all major overhauling and reconstruction.
6. The Government shall co-operate with the industry toward the continuance of successful operation of its units and wherever necessary recognize the principle of sub-contracting within the industry itself.
7. The Government will continue the policy of conferring from time to time with the accredited representatives of the industry in the consideration of their mutual problems.
8. The Government shall, as far as possible, standardize aeronautical accessories, materials and hardware and otherwise assist in the procurement of non-standard materials and supplies.

The Special Committee of the Aircraft Industry is continuing its work applying these policy suggestions to practical end.

SUMMARY OF PERFORMANCE OF RUNDFLUG

No.	Sponsor	Type	Engine	Pilot	Mileage
	Group A: Total Course 3257 mi.				
623	Daimler-Motoren-Gesellschaft	L21	Mercedes-37 hp.	Lorzer	2000
608	Daimler-Motoren-Gesellschaft	L20	Mercedes-19.8 hp.	Schrenck	1940
609	Daimler-Motoren-Gesellschaft	L20	Mercedes-20 hp.	Guritzer	1831
628	Gebr, Rieseler	R111	Anzani-40 hp.	H. Schulz	994
611	Akad, Fliegergruppe. Darmstadt	"Mohamed"	Blackburne 13.7 hp.	Fuchs	817
622	Fr W, Siebel	L21	Mercedes-38.7 hp.	F. W. Siebel	665
620	Udet-Flugzeugbau	U7	Douglas 25 hp.	Nopitsch	147
	Group B: Total Course 3257 mi.				
660	Udet-Flugzeugbau	U10	Siemens-58 hp.	Hochmuth	3257
639	Baumer-Aero G.m.b.H.	B11	Wright-63.5 hp.	Baumer	3257
634	Dietrich Flugzeugwerke	DP V11a	Siemens-69 hp.	Katzenstein	3257
633	Dietrich Flugzeugwerke	DP V11a	Siemens-70 hp.	Raab	3257
654	Junkers-Flugzeugwerke A. G.	K16	Siemens-71 hp.	Roeder	3257
652	Fliegerschule Auffahrt	Dietrich DP11	Siemens-79 hp.	Auffahrt	3257
651	Albatross-Werke A. G.	L68	Siemens-79.5 hp.	v. Richthofen	3257
656	Junkers-Flugzeugwerke A. G.	T26	Junkers L1a-76 hp.	Blume	2730
649	Albatross-Werke A. G.	L68	Siemens 70 hp.	v. Koppen	2709
657	Junkers Flugzeugwerke A. G.	T29	Junkers-74.8 hp.	Plauth	2436
638	Baumer-Aero G.m.b.H.	B111	Wright-61.5 hp.	v. Bulow	2182
631	Flugtechnischer Verein, Lubeck	S11	Siemens-53 hp.	Schwemer, Plankert	2057
663	Sportflug-G.m.b.H. Berlin	Heinkel HD32	Siemens-79 hp.	Dr. Ziegler	1627
641	Stahlwerk Mark	MET6	Mark-46 hp.	Siegel	1452
659	Junkers Luftverkehr	Focke-Wulf A 16b	Junkers 74.5 hp.	Potz	919
637	Dietrich-Flugzeugwerke	DP V11a	Siemens-59 hp.	Dr. Lachmann	696
640	Udet-Flugzeugbau	U10	Siemens-56.5 hp.	Billik	603
	Group C: Total Course 3308 mi.				
662	Caspar-Werge A. G.	CT1	Mercedes 80.5 hp.	Ritter	3308
653	Junkers-Flugzeugwerke A. G.	K16	Siemens-81 hp.	Wenke	3308
666	Junkers-Flugzeugwerke A. G.	T29	Junkers-82 hp.	Schnabele	3308
665	Junkers-Flugzeugwerke A. G.	T26	Junkers-83.5 hp.	Funk	3308
655	Dietrich-Flugzeugwerke	DP11a	Siemens-83.5 hp.	Dietrich	3308
661	Udet-Flugzeugbau	U12	Siemens-84 hp.	Kern	3308
644	O. Bornemann	Dietrich DP11a	Siemens-87.5 hp.	Carganico	3308
680	Heinkel-Flugzeugwerke	HD21	Mercedes-106.5 hp.	Basser	3308
670	Udet-Flugzeugbau	U8	Bristol-109 hp.	Polte	3308
691	Luftreederei, Magdeburg	Heinkel HD21	Mercedes-109 hp.	Junck	3308
685	Sportflug-G.m.b.H. Hannover	Heinkel HD21	Mercedes 110.5 hp.	Zander	3308
678	Arado-Handels-G.m.b.H.	Heinkel HD32	Bristol-111 hp.	Lorenz	3308
690	Wissensch Gie. Fur Luftfahrt	Albatross L30	Mercedes-111 hp.	Krupp	3308
689	Heinkel-Flugzeugwerke	HD21	Mercedes-112 hp.	Hartman	3308
681	Udet-Flugzeugbau	U12	Siemens-80.2 hp.	Udet	3262
650	Albatross-Werke A. G.	L68	Siemens-87.5 hp.	Hackmack	3215
674	All. Deutscher Sportverein	Caspar	Bristol-109 hp.	Sido	2721
676	Sportflug-G.m.b.H. Berlin	Heinkel HD22	Mercedes-120 hp.	v. Freyberg	2702
673	H. Jacobs	Caspar CT4	Mercedes-120 hp.	Jacobs	2663
672	Heinkel-Flugzeugwerke	HD32	Siemens-96.5 hp.	Thomas, Landmann	2275
664	Sarotti	Vagal Krip Sp. 5	Thulin-81 hp.	Schuler	1814
679	Albatross-Werke A. G.	L09	Siemens-102 hp.	Ungewitter	1796
647	Bremer Luftverkehr	Focke-Wulf A16	Siemens-84.5 hp.	Edzard	1639
686	Stettiner-Sportflug G.m.b.H.	Heinkel HD21	Mercedes 120 hp.	Roder	1589
675	Caspar-Werke A. G.	C24	Mercedes-111 hp.	Spietz	1582
668	Luftfahrzeug Gie. Stralsund	V	LFG-114 hp.	Rose	524
677	Arado-Handels-G.m.b.H.	Heinkel HD21	Mercedes-100 hp.	Leutert	415
684	Albatross-Werke A. G.	L69	Bristol-120 hp	Student	391
671	Focke-Wulf-Flugzeugbau	A16a	Mercedes-100 hp.	Andreae	230
683	Caspar-Werke A. G.	CT2	Mercedes-99.5 hp.	Ritter	106



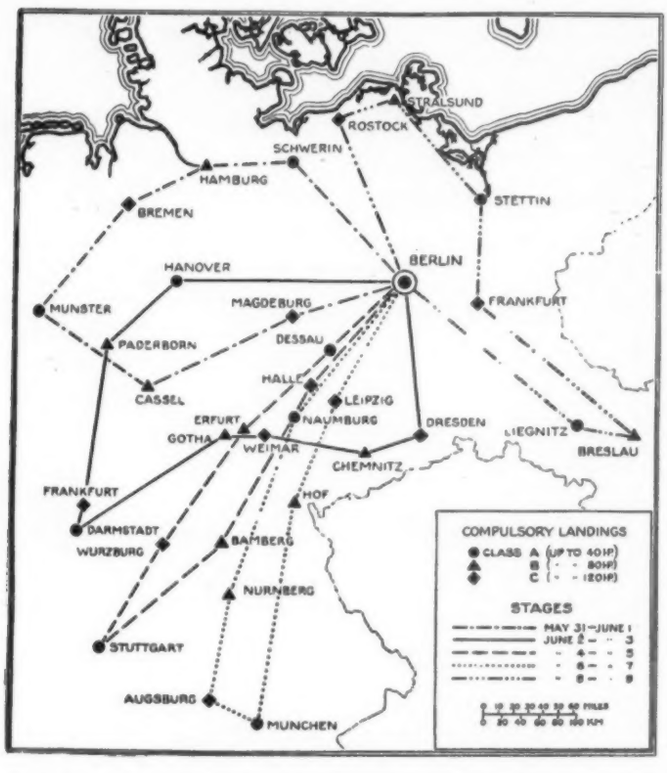
Photo's Kadel & Herbert

Upper Row, Left to right: The new Udet U12 Flamingo; The announcing loudspeakers; The Focke Wulf entry with Junkers air-cooled engine
Lower Row, Left to right: The Daimler, twin-19 hp. engined monoplane; Polte, a Udet pilot; The smallest contestant, the 12 hp. Mohammed

Results of the German Cross-Country Race

The Rundflug (Round Fly) of the German Aero Club was held during the first week in June and was one of the most interesting competitions held since the war. Its conduct and results are of particular interest in the United States in view of the S.A.E.—Detroit Aviation Society Intercity Tour which is to be held the latter part of September. The courses for the five days were laid out to include practically all of the present German Empire.

The tour was divided into three groups, based on the horsepower of the machines. Class A included all machines under



The five-circuit course of the Round-Germany Flight. Machines started from and finished at the Templehofer airdrome, the planes flying anti-clockwise

40 hp.; class B, 40-80 hp.; Class C, 80-120 hp. There were two main prizes; the *Berliner Zeitung* prize of 100,000 marks for classes A and B, and the Boelcke prize of 50,000 marks for Class C. There were a large number of other prizes for various features of the competition, given by the cities along the route and other organizations. There were 92 entries, approximately evenly divided among the various classes. Of these 92, 54 actually completed some part of the course.

An elaborate system of marks was evolved to determine the awards. The fundamental formula was:
$W = f \times m \times G - S$. W is the corrected distance. f is a change-of-pilot factor, arrived at in a rather complicated manner from the formula, $f = A/G$. G is the total mileage flown and A is a factor depending on the number of sections, over which, the same pilot has flown the machine without change. Full marks were awarded for a pilot completing a circuit, and a fraction of full marks, at a progressively decreasing rate, for changes. m is the factor for engine changes, and is expressed as $m = B/G$. B is employed and valued in the same manner as A in the pilot factor. S represents the penalties for changes made in any sealed portion of the machines. It amounted to 50 km. for class A, 100 km. for class B, and 150 km. for class C.

The power of the engines for purposes of classification was determined by the authorities in a somewhat novel manner. A propeller was carefully calibrated before hand and then fitted to each of the machines in turn. The number of revolutions developed by the engine with the calibrated propeller was noted and the power developed with the regular propeller calculated from the number of revolutions under normal conditions.

There were comparatively few new machines in the Rundflug. Most of the really new designs that were entered did not appear in the race. One or two of the machines, such as the Albatross L30, were actually of pre-war design. Although the development of the super-efficient monoplane glider in Germany some years ago was thought to herald the commencement of a new era in German airplane design, the Rundflug entries failed to demonstrate it. Apparently the German designers have found that in translating a glider into a power driven machine, a number of problems arise which lead them to produce a machine little different from the conventional machine. The entries were about evenly divided between monoplanes and biplanes.

Air-cooled engines were in the majority. Two Wright Gale (I4) 60 hp. engines took part in the tour in the Baumer entries. One of these machines was second in Class B. Both machines won other minor prizes. The Siemens-Halske company produced two new models for the tour. These were the SH11, an air-cooled, seven cylinder, radial of 80 hp., and the SH12, with nine of the same cylinders and giving 105 hp. There were several English Blackburne and Douglas light engines entered, that did not appear at the starting line. The entries were limited to German airplanes but foreign engines were permitted. Another engine of great interest was the Junkers L1. This engine is a sixcylinder, in line, engine with the cooling air sucked in around the propeller hub by a sirocco blower. The air stream goes along the top of the crankcase and then axially up the cylinder sides. Due to the round shape of the blower and its symmetrical position, the engine is difficult to distinguish from the usual water-cooled models when installed in an airplane.

The winners of the principal prizes are given in the following table:

Group A

Prize	*Marks*	*Entry*	*Number*	*Engine*
		B. Z. Prize		
1	25,000	Daimler Motoren Gie.	623	Mercedes
2	15,000	Daimler Motoren Gie.	608	Mercedes
3	10,000	Daimler Motoren Gie.	609	Mercedes
		City of Berlin Prize		
4	6,000	Gebr. Rieseler	628	Anzani
		City of Halle Prize		
5	1,000	Akad. Flieger. Darmstadt	611	Blackburne
		Richthofen Prize		
1	8,000	Daimler Motoren Gie.	623	Mercedes
2	5,000	Daimler Motoren Gie.	608	Mercedes
3	2,000	Daimler Motoren Gie.	609	Mercedes

Group B

		B. Z. Prize		
1	25,000	Udet Flugzeugbau	660	Siemens
2	15,000	Baumer Aero	639	Wright
3	10,000	Dietrich Flugzeugwerk	634	Siemens
		City of Berlin Prize		
4	6,000	Dietrich Flugzeugwerk	633	Siemens
		Richthofen Prize		
1	8,000	Udet Flugzeugbau	660	Siemens
2	5,000	Dietrich Flugzeugwerk	634	Siemens
3	2,000	Dietrich Flugzeuwerk	633	Siemens

Group C

		Boelke Prize		
1	25,000	Caspar Werke	662	Mercedes
2	15,000	Junkers Flugzeugwerke	653	Junkers
3	10,000	Junkers Flugzeugwerke	666	Junkers
		City of Berlin Prize		
4	6,000	Junkers Flugzeugwerke	665	Junkers
		City of Stuttgart Prize		
5	2,000	Dietrich Flugzeugwerke	655	Siemens
		Saxon Ministry of the Interior Prize		
6	900	Udet Flugzeugbau	661	Siemens
		Richthofen Prize		
1	8,000	Caspar Werke	662	Mercedes
2	5,000	Junkers Flugzeugwerke	653	Siemens
3	2,000	Junkers Flugzeugwerke	666	Junkers

Airline Investment and Operating Costs

Conclusion of Article Begun in August 3 Issue

By ARCHIBALD BLACK

Consulting Aeronautical Engineer

Some type of equipment for the heating of oil and water for servicing airplanes in cold weather has to be provided in all cases. In the case of one airplane per day only a makeshift system was proposed. This would consist of a laundry stove, water barrel, and an oil can arranged so that the water circulates through the barrel, while the oil can is lowered into the water to heat the oil. This equipment can be installed for $70.00 per unit.

For the larger scale operations, a complete system consisting of a small water boiler with cistern and an oil tank heated by a water coil would be used. An installation of this type, of such size as to supply one airplane every 4 to 6 hr. in extreme weather, was estimated in detail at a cost of $225.00 installed. For large headways, where the systems would be drawn upon at frequent intervals, it was assumed that the cost of the heating system would vary in direct proportion to the cost of the boiler required for it. No oil and water heaters were assigned to the emergency fields excepting in the cases where men were to be stationed permanently at these. In the case of operating 10 airplanes per day, it was assumed that a makeshift system cou'd be used at the emergency fields and these were provided. In the cases of 25 and 50 airplanes per day, allowances were made which were somewhat less than those made for the equipment at the station fields where the same numbers of landings would be expected.

Field Maintenance Equipment

Field maintenance equipment covers such items of equipment as are necessary for the maintenance of the field surface, roads, runways, etc. Detailed lists were developed and quotations obtained.

An allowance of fire extinguishers for the emergency landing fields was made upon the basis of the number of landings to be expected daily. Fire extinguishers for all field buildings and for city offices, etc. were estimated on the basis of floor space and conditions. In lieu of a water hydrant and storage tank system, an equipment of 40 gal. wheeled type, foam extinguishers was allowed for fields and shops on the basis of one such "engine" for each 40,000 sq. ft. of floor space in the buildings at the field. Where the water storage system could be installed economically, this might possibly be done instead, but the foam engines are particularly well suited to fires of the kind to be expected at fields.

Small first aid cabinets were assigned on the basis of one for each 10,000 sq. ft. of floor space for all buildings, whether rented or owned. In the cases of operating one and two airplanes per day, it was necessary to slightly increase this allowance in order to allow at least one cabinet to each field shop and office. The cabinets are of the type required by the State of New York and cost $12.00. Stretchers, cots and similar items were allowed on the basis of one set of this equipment for each station field. Quotations: Cots, $8.00, Stretchers, $10.00, Chairs, $9.00. Allowed $50.00 per set to include the various small items required.

Emergency Tool Sets

Emergency tool sets are estimated on the basis of one small set, or the equivalent proportion of a large set, for each 25,000 sq. ft. of floor space at fields, the rented space not being considered. Eight sets, one for each field and one for the main shop was considered as the minimum requirement. A detailed estimate, listing every tool required, was prepared for the small set and showed that this could be purchased for $13.00 to $15.00. Allowing about $5.00 for the holding case, these sets were figured as costing $20.00 each.

Complete radio equipment, including all inside and outside equipment for telephone and telegraph use was included to permit a range of 150 to 300 mi. telephone or 450 to 900 mi. telegraph.

The figures for miscellaneous field equipment included all items such as wheel chocks, handling dollies, ropes, tarpaulins, wind cones, etc. The amounts allowed were based upon rough estimates of the equipment required for various sizes of fields.

Lighting Equipment

The marking of the entire route by means of automatic, flashing beacons was contemplated for night flying. These would be spaced not over five miles apart and would have a visibility radius of about 8 mi. from low altitudes up to about 10,000 ft. To indicate the direction of winds at night, both at emergency and station fields, it was proposed to provide automatic wind Tees or wind cones illuminated in somewhat similar manner to the route beacons. Quotations on acetylene tanks and projectors were obtained which showed that it would be possible to construct wind indicating devices at a cost of about $150 each, which provide local visibility of 3000 to 5000 ft.

The wind indicators and beacons provide each emergency field with two lights. At least two more are necessary to mark the field lines for landing. (The actual emergency landing would be effected by the aid of wing tip flares.) Consequently two limit lights were allowed for each emergency field for the smaller headways and this was increased up to four for the larger headways. For the marking of obstacles at station fields, it was proposed to use kerosene, electric or similar lights in accordance with local conditions. The cost of these being slight, only nominal sums were allowed on the assumption that kerosene would be used where the extension of electric lines was expensive. For use in the effecting of night landings at station fields, it was proposed to furnish floodlight batteries on trailers. A very complete study of costs showed this to be the most economical and generally practicable equipment for service landings at night.

Rent of Field and Hangars

At terminals it is necessary to rent a plot for the station field unless these are purchased. In the cases of the smaller headways, where the full use is not made of each field, it will be possible to rent space for hangars and the right to use the flying fields at less than the rent which would be charged for exclusive use. It was therefore assumed that all the fields would be rented in the case of operating one to ten airplanes per day. The rents were assumed to be scaled up (with increased use of each field) to the point where they equalled about 7 per cent of the value of the property. When this point is reached, it may be assumed that the property will be bought outright in preference to accepting further increases. Thus the rents were estimated as below, the values being obtained from the actual rent of several fields.

1	airplane	per	day,	rental	$3000	per	field	(average)
2	"	"	"	"	$5000	"	"	
5	"	"	"	"	$7500	"	"	
10	"	"	"	"	$10000	"	"	

In the case of small traffic, as with the station fields, the emergency landing runways can be rented more economically than they can be purchased. Rented upon the basis of 7 per cent gross return they would cost $210 per year. However it will be possible to lease these plots for considerably less as they are to be used as little as possible and they can be used for raising grass while leased. Considering the probable amount of use, the following rentals were assumed:

1 to 5	airplanes	per	day,	rental	$150	per	field	(average)
10	"	"	"	"	$210	"	"	

The office space required in each city was carefully estimated and calculated at rates ranging down from $4.00 per

"Who's Who in American Aeronautics"

The second edition of "Who's Who in American Aeronautics" will be published Sept. 1, 1925. Below will be found new biographies that will appear in the forthcoming volume. An invitation is extended to all pilots actively engaged in aviation military, naval or commercial to send their biographical sketches for insertion in the next issue. The book will contain the biographies of practically all the leading persons in American aeronautics. The price of the book will be two dollars. Orders are being taken in advance as the edition is limited.

William Kenneth Ebel

EBEL, WILLIAM KENNETH, Aeronautical Engineer; born, Orangevile, Ill., Jan. 2, 1899; son of William H. Ebel and Nora A. (Rubendall) Ebel.

Educated: Monroe Wis., High School; Heidelberg Univ., B. A., 1921; Case School of Applied Science, B. S. in M. E., 1923.

Professional: The Glenn L. Martin Co., 1923.

Aeronautical Activities: A. S. Primary Flying School, Brooks Field, Tex., 1923-1924; Com. 2nd Lieut., A. S., 1925.

Flying Rating: F. A. I., Pilot's Certificate No. 6108.

Present Occupation: Assist. Eng., The Glenn L. Martin Co.

Address: 16800 St. Clair Ave., Cleveland, Ohio; home, 11440 Euclid Ave., Cleveland, Ohio.

Ray O. Fortner

FORTNER, RAY O., Aviator; born, Vincennes, Ind., June 2, 1902; son of Jack Fortner and Bertha (Henderson) Fortner.

Educated: Vincennes Schools, Vincennes, Ind., Auto and Airplane School of Kansas City, Mo.

Professional: 1918, Auto Mechanic and racing car driver 1919 to 1921.

Aeronautical Activities: Started flying in 1911; pilot in the following flying circuses: Sho me Flying Circus, Ondeal Flying Circus, Hoosier Flyers Flying Circus.

Present Occupation: Commercial aviator, operating own airplane.

Address: Aviation Field, Vincennes, Ind.; home, P. O. Box, 174, Vincennes, Ind.

Etienne Dormoy

DORMOY, ETIENNE, Aeronautical Engineer; born, France, Feb. 10, 1885; son of Berthe (Pierret) Dormoy and P. A. Dormoy.

Educated: Baccalaureat Letters and Sciences, Paris, 1903; Electrical Engineer, Lille, 1906.

Professional: Aeroplanes Deperdussen, 1911 to 1913 Paris; Schmidt Aeroplanes, Paterson, N. J. 1913-1914; French Army, 1914 to 1916; U. S. Air Service 1917-1918; Packard Co., 1919-1920; McCook Field 1920 to 1925.

Aeronautical Activities: Draf sman for Deperdussen 1911 to 1913; built Schmidt Monoplane, Paterson, N. J. 1913-1914; Sergeant Flier, French Army, (Bombing) 1914 to 1916; Engineer for S.P.A.D., Paris, 1917; for Lepere (Detroit), 1918; Packard 1919-1920; Air Service, Engineering Division, 1921 to 1925; built and flew the Flying Bathtub, Dayton, 1924; holder of Rickenbacker Trophy for Light Planes 1924.

Flying Rating: Pilot's Certificate, F.A.I., 1915, No. 2237.

Member: N.A.A.; Dayton Engineers Club.

Present Occupation: Aeronautical Engineer.

Address: McCook Field, Dayton, Ohio; home, 205 Roberts Boul., Dayton, Ohio.

Max Francis Stupar

STUPAR, MAX FRANCIS, Aeronautical Engineer; born, Mottling, Austria, Sept. 23, 1885; son of Joseph Stupar and Amelia (Anzel) Stupar; married, Lanis Williams, Dec. 16, 1922.

Educated: Chicago public schools; Imperial Art School; Int. Cor. School.

Professional: Kreatzer Fisher & Co., Lumber; West Pullman Lumber Co; International Harvester Co.: The Pullman Co.: Conkling Chemical Co.; Illinois Steel Co.; Consolidated Portrait Co.; Chicago Art Works.

Aeronautical Activities: 1909, organized Stupar Aero Works; 1914-1915, Chief Aero Eng., Chicago Aero Works; 1915 Standard Aero Corp.; Airplane Inspector. Signal Corps, Dec. 5, 1915 to organization of Bureau of Aircraft Production; organized Wood Inspection Division and Wood Salvage System, Jan. 1918; June 25, 1918, travelling Supt. of Wood Inspection, Office, Chief of Wood Division; organized Aircraft Dept., G. Elias & Bros., Inc., Feb. 1919; with G. Elias & Bros., Inc. to date.

Book Written: "Wood Technology."

Present Occupation: Gen'l. Supt. and Chief Engineer, Aircraft Dept., G. Elias & Bros., Inc.

Address: 415 Lexington Ave. New York City; home, 181 S. Long Beach Ave., Freeport, N. Y.

Alford Joseph Williams

WILLIAMS, ALFORD JOSEPH, Lt. (jg) U. S. Navy; born, New York City, July 26, 1894; son of Alford Joseph Williams and Emma E. (Madden) Williams.

Educated: P. S. No. 8, The Bronx, N. Y. C.; Fordham University, A.B. '14; Georgetown Law School, '25.

Professional: N. Y. "Giants," 1914-1915; baseball coach at Horace Mann High School, N. Y. C., 1916.

Aeronautical Activities: Student, Naval Aviation, 1917; active duty, Feb. 10, 1918; Mass. Inst. of Tech. for ground training; detached to Bayshore, L. I. for preliminary training, April 1918; Pensacola, Fla., for advanced training, July 1918; safety pilot instructor for navigation; commissioned, Ensign, U.S.N.R.F., Nov. 26, 1918; Squadron Commander, Preliminary Training, July 1919; Hampton Rds., as "test pilot," May 1922; in Curtiss Marine Trophy Race, also Pulitzer Race (Fourth Place) 1922; Hampton Roads, arresting gear testing to May 3, 1923; finished first, Pulitzer Race, St. Louis, 1923; established two world's speed records, 100 kilometers, 243.83, 200 kilometers, 243.67; established three kilometer speed records at Mitchel Field, 266.6 m.p.h., Nov 1923; U.S.N.A.S., Anacostia, to date

Present Occupation: Lt. (j.g.) U. S. Navy.

Address: Naval Air Station, Anacostia, D. C.; home, 921-19th St., N.W., Wash., D. C.

Blaine M. Tuxhorn

TUXHORN, BLAINE M., Commercial Aviation: born, Garland, Kansas, 1893; son of Charles H. Tuxhorn and Eva (Whitworth) Tuxhorn; married, Hazel Hickey, May 11, 1915.

Educated: Graded school and Springfield, Ill. High School.

Professional: 12th Street Garage and Maxwell Agency, K. C., Mo., 1913 to 1917; Rays Army School, Instructor Auto Motor Div., 1917-1918; Lightning Aviation, 1919 to 1923; B.M. Tuxhorn Aviation Co., 1923 to present date.

Aeronautical Activities: Started flying as Commercial Pilot, 1918.

Flying Rating: F.A.I. License, No. 4834.

Member: N. A. A.

Present Occupation: B. M. Tuxhorn Aviation Co.

Address: Richards Aviation Field, Kansas City, Mo.; home, 810 Cleveland Ave., Kansas City, Mo.

Edward A. Stinson

STINSON, EDWARD A., Commercial Aviation; born, Ft. Payne, Ala., July 11, 1894; son of Edward A. Stinson and Emma B. (Beavers) Stinson; married, Estelle Judy, Oct. 1 1919.

Educated: Public School, High School, College in Hattiesburg, Miss.

Professional: Flying, 1912 to 1924.

Aeronautical Activities: Exhibition Flying and instructing, 1912 to 1917; Instructor, U. S. Army and test pilot, Curtiss Co., 1917 to 1919; Commercial flying, 1919 to 1925.

Flying Rating: F.A.I. Certificate, R.M.A.

War Service: Instructor, U. S. Army, 1916 to 1919.

Honors: World's endurance record, Mineola, L. I., N. Y., Dec 30, 1921.

Present Occupation: Pres., Stinson Sales Corp.

Address: 439 W. Congress St.; home, 8226 Wilson Avenue, Detroit, Mich

Clinton Wilbur Howard

HOWARD, CLINTON WILBUR, Major, Air Service; born, Brockton, Mass., Nov. 27, 1890; son of E. C. Howard and Ida P. (Legg) Howard; married, Lois Pool, Sept. 10, 1917.

Educated: U. S M. A., West Point, '15; M. I. T.; 1921-1922, Sc. D. Aero Eng.

Aeronautical Activities: Flying, 1916, at North Island; Various commands during War; 1924, Chief Eng., A. S., Eng. Division, Mc Cook Field.

Flying Rating: J. M. A., 1917.

War Service: Major, A. S.

Present Occupation: Chief Engineer, Air Service, Engineering Division, McCook Field.

Address: McCook Field, Dayton, O.

Dean Ivan Lamb

LAMB, DEAN IVAN, Professional Soldier; born, Pennsylvania, Jan. 1, 1886; son of Henry Horatio Lamb and Viola Mary (English) Lamb.

Educated: Public and High School, Canton, Pa.; State Normal School, Mansfield, Pa.

Professional: Sailor, 1900-1901; U.S.Q., M.D., Manila, P. I., 1901-1902; Pearl Fishing, P. I. and Borneo, 1902-1903; Canton-Hankau, R. R. and Imperial Chinese Customs, 1903-1904; cowpuncher, Arizona, 1905; Panama Canal, 1906; Major Commandante Machine Guns, Revolutionists, Columbia, 1907; prospecting and mining, French Guiana, 1907-1908; traveling, Latin America until Sept., 1909; Commander, Machine Guns, Nicaragua Revolution against Zelaya; wounded Jan. 1910; Pato Mines Company, Zaragosa, Columbia, 1910-1911; Madeira-Mamore R.R., Brazil, 1911-1912; Machine Gun Commander, revolutions in Honduras and Guatemala, 1919; Colonel and Commander, Machine Guns Brigade, Rio Grande do Sul, Brazil, 1923; Colonel and Commander, Machine Guns, Revolution, Gran Chaco, Bolivia, 1924.

Aeronautical Activities: Curtiss Flying School, Exhibition Flying, 1912; Mexican Revolutionists, 1913; Royal Engineers, Sept. 1914; R.F.C., 1915 to 1917; training Squad. London, 1917; wounded July 1917, discharged, commissioned Oct. 1917; N. Y. Special Duty, British Mission; civilian instructor, test pilot; editorial staff, Air Service Journal, 1917; Air Mail Service, 1918-1919; director general of aviation; Commander of Artillery and Machine Guns, Aide de Camp to President of Honduras; Special Minister to Salvador and Guatemala to adjust frontier disputes; aided in quelling two minor revolutions by air; Air Courier for Republic of Central America; special missions via air to all Central American Republics, as Official Guest, 1920 to 1922; special flights for governments of Ecuador and Peru, 1922; Major and Flight Commander, Republic of Paraguay against Revolutionists.

Flying Rating: Central Flying School, Upavon, Cert. No. 242 (granted in France) 1915; R.A.C.; F.A.I. No. 117.

War Service: French and Belgian Fronts, from 1914 to 1917, service till 1919.

Honors: British A.O.; D.C.M. with citation; Military Medal with citation; Croix de Guerre (Fr.); Croix de Guerre, (Belg.); Star of 1914; citation for Distinguished Conduct Medal: "For conspicuous gallantry in action and devotion to duty, notably on July 7, 1917 at an altitude of 1300 feet he attacked alone a large formation of German biplanes forcing one to descend where it was captured with its entire crew. He continued to attack until his observer was killed and himself severely wounded and forced to descend in a fainting condition from exhaustion and loss of blood. This non-commissioned officer has previously destroyed seven enemy aeroplanes and proven himself a skilful and courageous pilot."

Address: c/o A. Johns, 170 Broadway, N. Y. C.; home, Canton, Pa.

Wilfred Alonzo Yackey, Jr.

YACKEY, WILFRED ALONZO, Jr., Aeronautical Engineer; born, St. Louis, Mo., Aug. 27, 1890; son of Wilfred Alonzo Yackey and Magdelena Barbara (Beck) Yackey; married, Olive R. Koken, June 22, 1921.

Educated: Illinois Univ.; Columbia Univ.

Professional: 1910-1911, Fulton Iron Works, Engineer; 1911-1912, Carpentier Auto Engineering; racing car designer, 1912 to 1914; E. A. Moross Exhibition, State Fairs; 1915-1916 W. A. Yackey Supply Co., 1916-1917, Contractor to Italian Gov.; 1917 to 1920 U. S. Air Service; 1920 to 1922, Pilot, U. S. Air Mail; 1921 to 1925, Yackey Aircraft Co.

Flying Rating: F.A.I.

War Service: A.E.F. France, 7 mo.; Italian Active Service.

Honors: Wounded and Cited, Belgium, Nov. 4, 1918.

Book Written: "Care and Operation of Internal Combustion Motors."

Member: S.A.E.; U. S. Air Mail Pilots Asso.: N.A.A.; Royal Aeronautical Society; A.A.A.

Present Occupation: Pres., Yackey Aircraft Co.

Address: Checkerboard Field, Forest Park, Ill.; home, 1838 S. 2 Ave., Maywood, Ill.

sq. ft. per year, in accordance with the areas required at each city.

Garage space for all cars and trucks having been provided at the fields, it was asumed that the general practice would be to return these to the field garages at the close of the day's work. However, some allowance must be made for special cases such as that of the local agent's car. There were allowed for each city office, the following sums:

1 and 2	airplanes	daily,	$360	per	year,	garage	rental.
5 and 10	"	"	$720	"	"	"	"
25	"	"	$1080	"	"	"	"
50	"	"	$1440	"	"	"	"

Gas, Lubricant and Upkeep Costs

The Air Mail Service, in the year ending June, 1922, used 26.42 gal. of gasoline per flying hour for Liberty engined airplanes, and flew 3.44 mi. per gal. The total cost for gasoline, oil and grease of this service was $0.1055 per mi. It was assumed that the cost of these would vary directly with the horsepower. Thus a new figure for use with 540 hp. engines for instance would be:

$$\frac{\$0.1055 \times 540}{400} = \$0.1424 \text{ per mile flown}$$

The cost of the material required for each airplane rebuilding (after 500 hr. of flying) for a headway of one airplane per day was estimated on the basis of the actual work required to be done as shown by the U. S. Air Mail experience. However, independent estimates were obtained on the cost of labor and material necessary. The cost of materials and the man hours of labor are assumed to decrease, for larger operations which would permit higher efficiency in the shops and better purchasing conditions. The cost of materials and man hours of labor expected to be necessary to repair the average "crash," based upon the U. S. Mail experience were similarly estimated. The number of such crashes to be expected was also based upon the Air Mail experience.

Air Mail records and personnel were consulted to determine the actual cost of parts replaced in each engine overhaul, (based upon Government war costs) and these were increased in proportion to the increased cost of new engines. There was also added the cost of complete regrinding on the average of every fourth overhaul.

The replacements of engines were based upon a life of 800 hr. with salvage value at the end of this life of 20 per cent of the original cost, for the average engine. Present airlines are getting 400 and 800 hr. out of their engines without regrinding. In our estimates it was planned to regrind cylinders at least once during the 800 hr. life and to regrind crankshafts once during this life. Thus the estimate of 800 hr. should be very conservative with engines properly cared for.

Trucks and Automobiles

The average truck or automobile will make not over two round trips daily between the field and city. Thus the average will be possibly 50 mi. daily for either cars or trucks, or a total of 12,600 for the 252 flying days. Tractors were assumed to average 5 mi./hr. for 8 hr., one and one half days per week or a yearly total of 3,120 mi.

The cost of operating the 3.5 ton trucks was taken from actual data on the cost of operating a fleet of the same make which showed this size to cost $0.1986 per mile for gasoline, lubricants, tires, repairs, etc. The figure of $0.20 per mile was used in compiling estimates.

The costs of operating Ford trucks and Ford cars were taken from the Post Office Department records. As these costs include several items accounted for separately in our estimates, they should be sufficiently liberal to be safe. The records of the Fifth Avenue Coach Co. of New York were also compared and it was noted that these costs, scaled down in proportion to the weights of chasses, closely checked. The estimates were based on $0.10 for Ford cars and $0.15 for Ford trucks per mile.

The item of office supplies, etc. is subject to considerable variation and absolutely trustworthy figures are not usually available. Based upon what data was obtained the sum of $300 per year per office employee was allowed to cover all office supplies, postage, telegrams and incidentals. As much of the telegraphic work can be handled by the company's radio, this part of the office cost can be kept down.

Depreciation

Depreciation was not allowed on engines or on spare parts of either engines or airplanes as these are accounted for as used up. Before estimating the depreciation of complete airplanes, the machines and equipment which have been figured as destroyed were first deducted from the total of those owned. Depreciation was then figured on the destroyed equipment only up to the time of the accident as the balance is accounted for by the washout accounting. Thus the average depreciation charged against airplanes and equipment figured as destroyed will be one half of the annual rate, or 12.5 per cent. Depreciation at the yearly rate of 25 per cent was then calculated on the balance of the airplanes and their equipment. This annual depreciation was assumed to take care of the salvage value and was written off chiefly to provide for the possibility of types becoming obsolete. The 500 hr. overhauls and rebuilding are so thorough as to provide practically new machines after each. Thus the airplanes would last until destroyed if not rendered obsolete by the development of improved types.

The Napier Lion exhibit at the Wembley exposition

Heating, Light, Power and Water

The cost of heating buildings was based upon the cost of heating a large airplane factory and office, per square foot of floor, at 1922-23 costs. Allowances for oil and water heaters were made in proportion to the sizes of the boilers used.

The costs of light and power were based upon the cost of light and power for a large airplane factory and office worked out per square foot. In this case the tendency would be for the light bill to run high on account of the line operating at night while the factory mentioned did very little night work. This was assumed to be balanced by the fact that the factory would use more current for power than the shops, hangars and field offices would.

In many cases, the item for water would consist only of the very slight cost of maintaining the wells provided. In other cases it would be necessary to truck water while in many a regular water supply would be available. It was assumed that the average cost would be represented by the metered water supply conditions. Thus the water cost was estimated on the basis of the cost of water supply per square foot of floor space for a large airplane factory.

Emergency field telephones were based upon a cost of a minimum of $5.00 per month each and an allowance for every forced landing to be expected. Telephone bills for fields and city offices were based upon an allowance per year for each office employee and pilot. This was based upon telephone bills for a very small office and a large factory per year per office worker. While this method of estimation is crude, it is probably as accurate as any other which might be used.

Building and machinery maintenance costs were based upon airplane factory and machine shop records which were available.

For the maintenance of automatic flashing beacons the manufacturers quoted $50 to $100 per year according to location. Cost of $75 was assumed as the average. For the illuminated wind indicators and field limit lights gas and incidentals were estimated at $35 per year each. An arbitrary allowance of 50 per cent of the cost per year was made for the maintenance of obstacle lights. The landing floodlight battery maintenance, gas and incidentals, were estimated at $0.15 per hour of use per unit.

Advertising

No attempt was made to go into a completely detailed schedule of advertising as the preliminary study of this cost suggested that newspaper advertising would probably form the largest *single* item in advertising costs. Accordingly, a schedule of newspaper advertising was fully developed to cover the cost of the space and the preparation of the copy. A considerable number of "dummy" advertisements were prepared to show the proposed use of space definitely assigned to each newspaper on the lists. The assumption was then made that the other miscellaneous advertising, circularizing, publicity, etc., would equal this cost. The allowance for miscellaneous advertising covers all special advertising such as trade magazines, circulars, handbills, etc. In the case of the headway of one airplane per day, an allowance was also made of $10,000 for announcements of the opening of the service. These announcements would appear two columns wide, 6 in. deep, about twelve or fourteen times, distributed over a few months time, in the seventeen leading newspapers in the territory served.

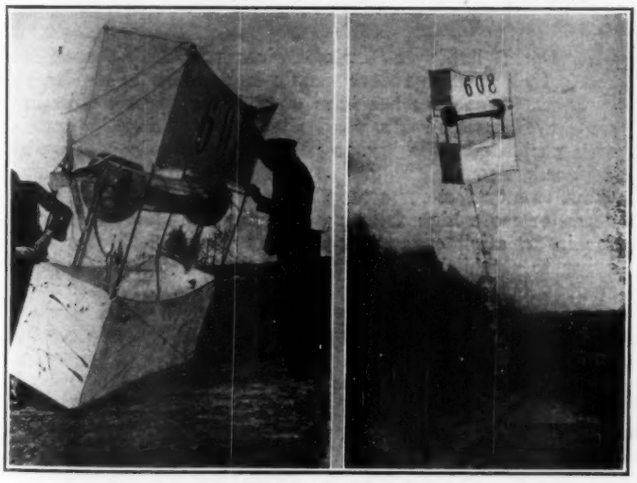


Photo Kadel & Herbert

The rotor applied to a meteorological kite

On that proportion of the business which is obtained through sources other than a company's own force, a commission of 5 to 10 per cent will be required to be paid. The assumption was made that 5 per cent of the total operating cost would be sufficient to cover these commission charges.

Insurance premiums must be based upon quotations obtained from the underwriters and, as these are constantly modified, the figures used in our estimates are now probably obsolete. Among the more important items to be covered are: *Fire risk* on: (a) buildings; (b) chauffers; (c) mechanics, etc.; (d) office employees. *Accident liability, property and persons*, on: (a) airplanes; (b) motor trucks and cars. Losses of goods in transit should be covered at least to the extent of a "maximum liability" clause which would be made part of each transportation contract.

As regards losses on equipment in accidents, the question of whether this should be covered by the operating company or by insurance underwriters will depend upon circumstances. In all cases of very small scale operations it is advisable to take out coverage to protect the operator. On the other hand, in the case of large scale operation, it will frequently pay better for the operating company to adopt a self-insurance system.

Civil Aviation Survey to be Made

A world economic survey of air transportation, the first to be undertaken in this or any other country, will be carried out jointly by the Department of Commerce and the American Engineering Council. The survey is described as an economic study of civil aviation in the leading nations and a constructive analysis of the economic possibilities of civil aviation in the United States.

A committee of six, with J. Walter Drake, Assistant Secretary of Commerce, as chairman, has been appointed to direct the work, which will be actively conducted by a field staff, of which Prof. Joseph W. Roe, head of the Department of Industrial Engineering in New York University, vice-chairman of the committee is director. The other members of the committee are: Dr. W. F. Durand, president of the American Society of Mechanical Engineers, New York; Prof. E. P. Warner, head of the aeronautical engineering course at the Massachusetts Institute of Technology; Luther K. Bell, Washington, traffic manager of the U. S. Air Mail; C. T. Ludington, Philadelphia, aircraft operator. The field staff, in addition to Director Roe, will consist of J. Parker Van Zandt, U. S. Air Service, who has recently made an extensive study of civil aviation abroad, and Prof. Alexander Klemin, head of the aeronautical engineering course in New York University. Lieutenant Van Zandt has been named secretary of the committee. It is expected that the work will be completed in about six months.

The scope of the survey was outlined in the following statement by Professor Roe: "At the outset a comprehensive survey will be made of commercial air lines in other countries, including services offered, volume of traffic, safety, regularity, financial status and equipment, cost of operation, government aid, and maps showing routes, landing fields, distances and density of traffic. This will be followed by a similar study of what has been done in the United States, where most of the experience is confined to the Air Mail. There will be a study of the geographic, economic and operating conditions in the United States, the volume of business possible for mail, express and passengers, the possible routes and their relation to existing forms of transportation.

"Next there will be an economic study of the necessary flying equipment and personnel, ground equipment and personnel, insurance and necessary air legislation as to licensing ships, pilots, etc., and a study of the investment possibilities. There will be a review of the Government aid offered to water transportation such as the Coast Survey, Lighthouse Service, harbor improvements, etc., and how far and in what ways similar aid can be given commercial air transport. There will be a study of applications of aircraft to industrial uses other than transportation, such as combatting the boll weevil, forestry patrol, aerial photography and surveying, etc.

"The purpose is to provide both a fact-finding review of civil aviation as it is at this date and a basis for analyzing the economic and other conditions necessary for successful civil air routes in this country. If commercial aviation is to be developed in this country it will probably be largely through private financial support rather than direct governmental aid, as in Europe. This support must come from investors and banks, who will not and can not be interested in this field until the facts relating to the commercial possibilities, risks, etc., are available."

AIRPORTS AND AIRWAYS

Iola, Kan.

By Paul Neff

B. T. Barber bought a 40 acre tract adjoining the city limits on the northeast which will be known at the Barber Field. He has a hangar completed with high test gasoline and and oil on the field at all times. There is nothing to clear on this field but a low wire fence. The field has two runways, north and south, east and west. The east and west runway is at the north end of the field, north and south runway at the east end of the field. A large ditch in the south west corner of the field is being filled as fast as possible. Six planes are now working off this field. B. T. Barber with Laird Swallow, Harry Crewdson, Lincoln Standard; Tod Tobey with model S Laird; Paul Neff, OX Standard and fifty horsepower sport ship; Royal Geery with a SS3 powered with a 4 cyl. Curtiss engine. Pilots are always welcome; no taxi charges to and from the field.

Charleston, West Va.

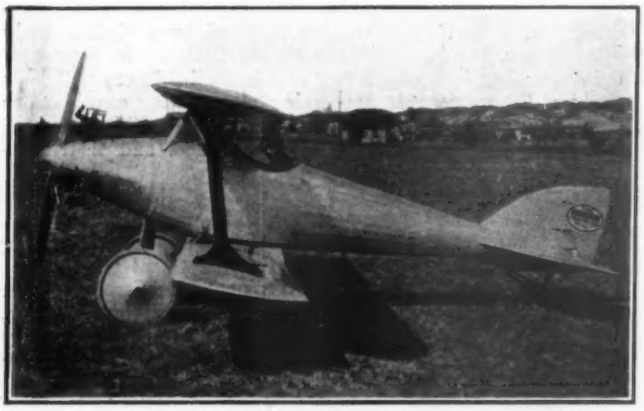
The Orin Welch Aviation School, which was recently opened at Dunbar 5 mi. from here, is having great success. The school has seven students now and will have twenty more in the next month.

Fred Oliver and Ray McLain of Charleston, the first two students, have ordered a new 3-place Standard to be assembled at the hangar by Orin Welch and Thomas Kirkpatric of Lewisburg, W. Va., Welch's mechanic.

Recent arrivals at the Field were A. B. McMullen of the Shanks-McMullen Air Craft Co., of Huntington, W. Va., and J. W. Hill of Huntington accompanied by Homes C. Stowers, who made a parachute drop at the field.

Battle Creek, Mich.

Pilots wishing to use the Battle Creek Airport at Battle Creek, Mich., are warned to watch out for pylon pole in the north section of the field and a fence running east and west through the south portion.



Lincoln Standard 'Sportplane' with 35 hp. Anzani motor

The Field is being prepared for the Air Race Meet to be held Aug. 28-29-30 and other buildings and stands will be erected shortly. Approximately 100 acres are being left available to ships wishing to land.

Visiting pilots are requested to call The Battle Creek Air Transportation, Association Bell phone 697 upon arrival. Transportation to the city will be provided and arrangements made to service them with gasoline and oil.

Garden City News

The Curtiss Exhibition Co. of Garden City, has taken its giant Handley-Page airplane out of its berth where it has been hibernating for the past winter, and placed it on the line. The field gang has been laboring prodigiously for the last three days and expect to have her in the air in another week or so. She has a mean wing span of 104 ft., is powered

International Newsreel Photo

Left to right: A. H. G. Fokker; H. E. Hartney; Igor Sikorsky; W. H. Barling

with two Rolls-Royce Eagle engines of 350 hp. each, and comfortably carries twelve people in addition to a pilot and observer. Since she has been on the line great crowds have come to inspect it. In awed silence they minutely examine each part, shake the big propellers, and wiggle each control surface. Then invariably each inspector will back away about twenty feet from the ship and amazedly utter freely a dozen or more high falluting adjectives. Numerous requests for information concerning a rumor that the Curtiss Co. is going to establish an airline, have been made. To set any anxious minds to rest, the Curtiss company intends merely using the great airliner about the field as an added attraction to passenger carrying, and parachute dropping at their Garden City Field.

The Stow Field Meet

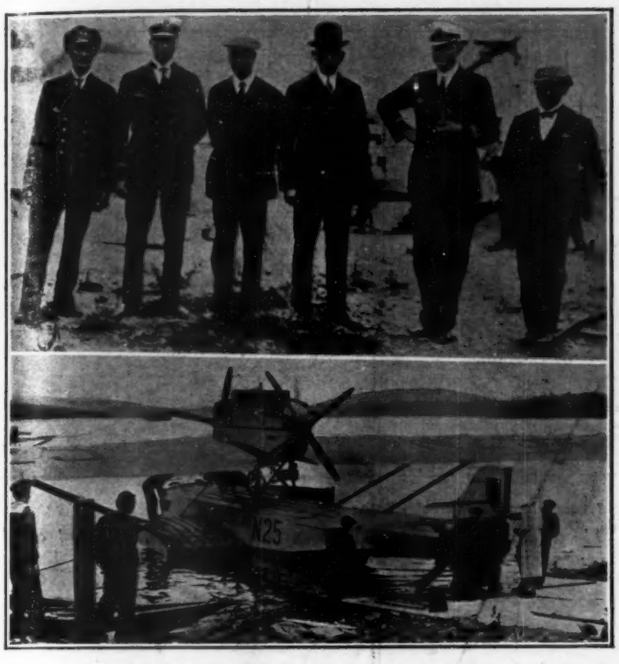
More than 10,000 people gathered at Stow Field July 18 to witness the lighter-than-air events and to see the christening of the "Pilgrim," Goodyear's tiny air yacht, the smallest airship in the world and the only commercial airship to be inflated with helium.

The little airship made a pretty picture as she sailed gracefully over the tree tops with Capt. Jack Yolton, First Mate Carl Wollam, of International Balloon Race fame and A. C. O'Neill, mechanic, in the cabin, and after making a circuit of the field nosed down to a perfect landing. All four racing balloons were floating slowly toward the south when the "Pilgrim" was brought up to the christening stand.

Mrs. P. W. Litchfield, wife of Goodyear's vice president, designer of the ship, then released a pair of homing pigeons which rested in a cage underneath the nose of the yacht. "I christen thee the "Pilgrim" and may thy flights be always successful," she said.

It was shortly after 4 o'clock when the "Goodyear V" left the ground in the attempt to break the record of 450 mi. made by Major Smith in the National Race at St. Joseph, Mo., and to win the trophy offered by the Akron Centennial Committee in honor of the late Major Thomas Baldwin, dean of American aviation. Next to take the air was the Army entry which was followed at 10 min. intervals by the "Goodyear IV" and the "Goodyear VI."

Katherine Litchfield, daughter of P. W. Litchfield, Gertrude Stadelman, daughter of President G. M. Stadelman, Katherine Stillman, daughter of Secretary C. A. Stillman and Miss Ruth Tibbits sponsored the racing balloons. The bags moved slowly toward the south but during the night the wind changed



The return from the north. Left to right: Ohmdahl, Deitrichsen, Ellsworth, Amundsen, Rüser-Larsen and Fuecht

and by midnight was blowing nearly due north. Ralph H. Upson, veteran balloon pliot, was the official starter of the race, which was officially sanctioned by the N.A.A.

The winner of the Junior National Balloon Race for bags of 35,000 cu. ft. gas capacity is undecided. Walter Morton and Herburt Maxson, pilots of the "Goodyear IV" representing the Akron Chamber of Commerce, landed their bag safely near Lyndonville, N. Y., three miles from the shore of Lake Ontario, at 3:30 p. m. July 19. John Boettner and Porter Collins, wearing the colors of the Akron Rotary Club, brought the "Goodyear V" to earth 13 mi. north of Toronto at 8 p. m. the same day. Both bags covered a distance estimated at 236 mi. and some time must pass before the contest judges can officially declare the winner.

The U. S. Army entry with Lieuts. Clyde Kuntz and Max Meyer as pilots landed at 12:25 p. m. July 19 at Copetown, Ontario, after covering a distance of 190 mi. Herman Kraft and J. F. Cooper brought down the "Goodyear VI," the Centennial Committee entry, at Royalton, Ohio, at 1 a. m., July 19, 28 mi. from Stow Field.

A score of planes from McCook Field and Wright Field took part in the aviation events the nineteenth. A crowd estimated at 50,000 turned out to see the program which was the biggest of its kind ever held in that part of Ohio.

Numerous Army pilots and pilots in the Air Reserve Corps took part in the meet. Capt. J. L. Zimmerman led a squadron of planes from Wright Field in some clever formation flying. Floyd Collins had a U. S. Mail Service plane from Cleveland on exhibition.

A pretty parachute jump was made by Serg. Paul Deweese from the wing of Capt. E. Loughlin's plane, using two parachutes in the descent. Stunts were performed by Lieuts H. R. Wells of McCook Field in a DH Honeymoon, Lieut. R. R. Fetterhoff from Wright Field and Sec. Lieut. Albert E. Harter, both using Curtiss planes and Major H. R. Harman from McCook Field with his Fokker CO4.

The Wisconsin Air Derby

The Wisconsin Air Derby, sponsored by the *Wisconsin News*, was held at Milwaukee, July 20. Over 50,000 people were on the field and as many more around it. The following are the results of the two principal races.

HANDICAP RACE—100 MI. COURSE

Pilot	*Sponsor*	*Time*	*Award*
1—M. Warshauer,	Lindsay-McMillan Co.	1:14:17	$500
2—Anton Brotz, Jr.,	Gugler Lithograph Co	1:14:21	300
3—L. Holoubek,	Red Star Yeast	1:14:59	150
4—George Wiens,	Fischer Furniture Co.	1:19:01	100
5—Christian Setvate,	Waukesha Milk Co.	1:19:10	100
6—Dwight Morrow,	Julian Goldman Co.	1:21:51	100
7—Travis Boggs,	Federal Tire Co.	1:22:40	100
8—Edgar La Parle,	Ed. Schuster & Co.	1:23;19	100
9—Frank Shoblaska,	Wisconsin Furniture Co.	1:23:24	100
10—John A. Grab,	Walter Diehnelt, Inc.	1:27:33	100
11—G. Meisenheimer,	Milwaukee School of Engineering	1:37:20	100
12—Dan Kiser,	Wisconsin Theater	2:00:35	...

The time above includes handicaps given various pilots.

FREE FOR ALL RACE—125 MI. COURSE

Pilot	*Sponsor*	*Time*	*Award*
1—G. Meisenheimer,	Milwaukee School of Engineering	1:39:12	$500
2—M. Warshauer,	Lindsay-McMillan Co.	1:46:56	250
3—L. Holoubek,	Red Star Yeast	2:03:11	150

La Parle and Kiser failed to finish in this event.

During the morning many of the pilots flew over the city "tuning up" for the big event. Just before the start of the first race, a speck appeared out of the sky to the south. At the stick of the plane was John A. Graf of Madison, who earlier in the day was forced to the ground at Kenosha by a storm during a trial spin over the course. Graf started just eighteen minutes after the last of the other pilots had taken off.

Working like clocks, the planes taxied to the starting point and then took off at the signal from First Lieut. M. D. Mann, assistant air officer of the Sixth Corps area, United States Army, Chicago, who was in direct charge of the meet and to whom the lion's share of the credit for its success must be given. Lieutenant Mann was assisted by Lieuts. Russell H. Cooper and Charles Backes of Chanute Field, Rantoul, Ill., who held the official stop watches.

The fliers were checked at five other points—Lincoln park, the Milwaukee Yacht Club, Racine, Kenosha and Waukesha.

During the interval the fliers were out of sight of the airport, the crowd was given a continuous round of entertainment.

Shortly after 1 p. m. two regular Army pilots—Lieuts. James Doolittle and E. H. Barksdale, both from McCook Field, Dayton, Ohio—landed on the field after a record run of two and one half hours from Dayton to Milwaukee.

It was these two who thrilled thousands with the most spectacular exhibition of stunt flying ever seen in Milwaukee. For almost half an hour they looped, climbed, spun and twirled.

Luigo Sciorato, of Bordighera, Italy, also aided in the entertainment with a series of strong man stunts. The musical entertainment of the day was furnished by the Cutler-Hammer fife and drum corps.

UNITED STATES AIR FORCES

U. S. ARMY AIR SERVICE

No Bond Required

Paragraph 4, Section III, Bulletin No. 2, War Department, 1925, as given on page 573 of the May 11 issue, reading

"All persons before obtaining permission to use airdrome facilities as contemplated in paragraphs 1, 2 and 3 above, must furnish a bond for $5000 to protect the Government against damage to property."

has been rescinded.

School Courses

Fiscal Year 1926

AIR SERVICE

School	*Course*	*Students*	*Begins*	*Ends*
McCook	Aero. Eng.	R. A. Off.	July 1, 1925	June 30, 1926
Langley	Tactical	R. A. Off.	Oct. 12, 1925	June 30, 1926
"	Tactical	N. G. Off.; R. O.	Feb. 1, 1925	April 30, 1925
Kelly	Adv. Flying	all student pilots	Mar. 15,1925	Sept. 14, 1925
	Adv. Flying	"	Sept. 15, 1925	Mar. 14, 1926
Brooks	Primary Flying	Reg. Flying Students	Mar. 15, 1925*	Sept. 14, 1925
	Primary Flying	"	Sept. 15, 1925*	Mar. 14, 1926
	Primary Flying	N. G. & R. O.	Mar. 1, 1925*	June 30, 1925
	Primary Flying	N. G. & R. O.	Sept. 1, 1925	Dec. 31, 1925

*Note: Instruction of flying cadets starts one week earlier.

Scott	Bal. & Airship	Reg. Flying Students	Sept. 15, 1925	July 14, 1926
	Bal. & Airship	N. G. Off. & R. O.	Aug. 15, 1925	Dec. 14, 1925
Chanute	Tech. Photo	R. A. Off.	Oct. 1, 1925	July 14, 1926
	Tech. Comm.	R. A. Off.	Oct. 1, 1925	June 30, 1926
	Tech. Photo	N. G. Off.; R. O.	Mar. 1, 1925	May 30, 1925
	Tech. Comm.	N. G. Off.; R. O.	Oct. 1, 1925	Dec. 31, 1925
	Maint. Eng.	R. A.	Oct. 15, 1925	Apr. 14, 1926
	Maint. Eng.	N. G. & R. O.	Apr. 1, 1926	June 30, 1926
	Armament	R. A.	Oct. 15, 1925	Mar. 14, 1926
	Armament	N. G. & R. O.	Apr. 1, 1926	June 30, 1926

Weight Dropping Parachutes

Many recall the problem encountered at some time in their experience of letting down supplies from an airplane to the ground at a spot where a landing could not be made. Two notable instances may be mentioned. One occurred a year ago last winter when a colony marooned on an island in the Great Lakes by ice floes suffered for lack of food until relief was brought by airplane. Another goes a bit farther back in aviation history when a party went into one of the most inaccessible regions of old Mexico by automobile and on foot to salvage a plane abandoned by the late Lieut. Alexander Pearson, who had a forced landing and who suffered many hardships in his wearisome journey back to American soil. On this occasion ice and other supplies were handed down from an airplane flying above the salvaging party. Various makeshift contrivances were used for the purpose in these and other instances, with varying degrees of difficulty and success.

To fill the need of a suitable device for transferring supplies, etc., from airplane to the ground, the Parachute Branch of the Engineering Division at McCook Field, Dayton, Ohio, recently completed tests on a weight-dropping parachute, which promises to accomplish its important function efficiently and with the least amount of difficulty. This device consists of a neat metal container, 4 ft. in height and 15 in. in diameter, divided into two separate compartments. The lower compartment of the container is utilized for the supplies, while the upper compartment, which is somewhat shallow, contains a folded parachute of cotton fabric and measuring 25 ft. in diameter. The container is carried lengthwise on a bomb rack and released by the bomb release handle. Upon release a cord, one end of which is fastened to the airplane and the other to the fabric cover of the container, extending down into the folds of the parachute pulls the cover off and the parachute out of the top compartment. The parachute then takes the air, suspending the container and continues the journey down to the ground at a safe speed of 16 ft./sec.

The lower compartment of the container opens down the side and into it fits snugly a metal can for water, gasoline or other liquids. Solids may be packed directly in the container. The weight of the parachute and the container is about 25 lb., and a maximum of about 150 lb. may be lowered in this way.

International Newsreel Photo

The Maryland N. G. pilots who won the formation event at the Miller Field Meet. Left to Right: Maj. W. D. Tipton; Capt. C. A. Messon; Capt. Charles T. Phillips; Lieut. T. B. Bourne and Lieut. L. M. Willinger

A smaller parachute, having a diameter of 15 ft., has also been designed to take care of from 30 to 50 lb. in supplies. This parachute is wrapped about the bundle which it suspends and is thrown from the rear cockpit, a cord rolled up in the parachute and held in the hand by one end, or fastened to the airplane, hastening its unfolding.

Meteorological Service

Weather prophets are the latest product of the Service Schools of the United States Army. Though weather forecasting is popularly regarded as guessing whether tomorrow will bring sun or rain, the commercial and military importance of the subject has led to much wider and deeper study of atmospherical conditions. Graduates of the Meteorological Section of the Army Signal School at Camp Vail, N. J., are placed on duty along the numerous War Department airways where weather forecasts must be supplied to aviators before they start on extended flights. Not only future temperatures and storms must be forecast, but also upper strata air currents and direction and duration of winds, which are of great importance to the pilots of the Air Mail and military flights. So important is the use of meteorological data in the Army Air Service that standing orders prohibit aviators "taking off" without consulting their operations officer about "wind aloft" and require them to be informed fully on the contents of the latest storm bulletins. In planning the erection of new airdromes and flying fields the weather sharps are given careful and extended hearings.

West Point Graduates in A.S.

The following list of graduates of the United States Military Academy have been appointed as second lieutenants in the Regular Army of the United States and have been assigned to the Air Service with rank as of June 13, 1925:

Harry Gordon Spillinger, Vincent Joseph Esposito, John

Henry Dulligan, Walter Grant Bryte, jr., Russell Edward Randell, William O'Connor Heacock, Walter William Hodge, William Frank Steer, Wiley Thomas Moore, Thomas Elton Smith, Lewis Ackley Riggins, William Gardner Plummer, Raymond Cecil Conder, John William Black, Arthur Charles Boll, Clifford Palmer Bradley, Branner Pace Purdue, Robert Emmett Burns, Joseph Cyril Augustin Denniston, Nathaniel Claiborne Hale, Raymond Miller Barton, Donald Hudson Bratton, Welborn Barton Griffith, jr., Hubert Whitney Katchum, jr., Earl Walter Barnes, Porter Bush Fuqua, Thaddeous Elmer Smyth, Russell Thomas Finn, John Laing De Pew, George Bateman Peploe, Charles Henry Caldwell, Mitchell Alonzo Giddens, George Wellington Madison Dudley, Theodore Anderson Baldwin, 3rd, Judson MacIvor Smith, Edgar Turner Noyes, Ernest Avner Suttles, August William Farwick.

Army Air Orders

Sec. Lieut. W. O. Bunge, O.R.C., ordered to Langley Field, Hampton, Va.

Sec. Lieuts. C. W. Davies and P. H. Downes, A.S.R., to Selfridge Field, Mich.

Lieut. H. F. Rouse from Langley Field, Va., to Wilbur Wright Field, Ohio.

Capt. Wm. E. Kepner from Lakehurst, N. J., to Brooks Field, San Antonio, Tex.

Lieut. E. S. Schofield to Air Service Balloon and Airship School, Scott Field, Ohio, for instruction.

Sec. Lieut. D. F. Stace promoted to first lieutenant.

Lieut. J. H. Kindelberger, O.R.C., to Langley Field, Hampton, Va.

Sec. Lieut. J. P. Kidwell to Brooks Field, Tex., for training.

Lieut. W. F. Regan, O.R.C., to Fairfield, Ohio.

Lieut. E. R. Strong, O.R.C., to Middletown, Pa.

Lt. Col. J. A. Hambleton and Capt. H. E. Weeks, O.R.C., to Langley Field, Va.

Capt. L. M. Young, Sec. Lieut. B. F. Bower, Lieut. B. G. Cook, Lieut. E. M. Wilcox, A.S.R., to McCook Field, Dayton, Ohio.

Capt. L. S. Connelly, Capt. R. E. Murphy, Lieut. M. F. Crutcher, Lieut. C. C. Shangraw, Sec. Lieut. G. V. Dack, Sec. Lieut. H. I. Jenks, Sec. Lieut. F. C. Parsons, Sec. Lieut. C. W. Welsh, A.S.R., to Chief of the Air Service, Washington, D. C.

Capt. F. C. Greulich and Capt. D. M. Warner, A.S.R., to Chief of Air Service, Washington, D. C.

U. S. NAVAL AVIATION

Navy to Map Alaska

Plans for making airplane photographs of portions of southeastern Alaska were completed June 27 when the Secretary of the Navy, after negotiations with the Secretary of the Interior, agreed to provide the necessary airplanes and personnel to the Geological Survey of the Interior Department.

Cooperation between the two departments will be made in connection with investigations of the mineral resources of Alaska by the Geological Survey. Lack of adequate maps of much of the region back from the coast in southeastern Alaska has seriously handicapped these investigations because of its inaccessibility and the photographing of the area from the air will provide knowledge of the general features of the territory necessary for the geologists to complete their work. It is also estimated that a considerable saving will be made to the Government through this method of mapping the area. In extending the cooperation, the Navy Department stipulated that a portion of the expense of furnishing the airplanes, personnel, and other facilities must be paid by the Geological Survey.

The area to be covered by airplane photographs is approximately 18,000 sq. mi. The project presents many technical difficulties, as storms and low-lying clouds are frequent in southeastern Alaska, and the relief of many of the islands along the coast is strong, some of them rising abruptly to heights of more than 4,000 ft. Furthermore, there is, in this part of Alaska, so little flat land that has been cleared and is suitable for landing-fields, that probably seaplanes will be used exclusively.

Although the work is to be done at the specific request of the Interior Department, it is believed that the results will be of material service to many of the other Government departments and bureaus, both in the civil development and in the military defense of the country. Members of several other bureaus, especially the Coast and Geodetic Survey, the Forest Service, the General Land Office, and the Federal Power Commission, have expressed keen interest in the project and have informally offered such assistance as their regular duties permit. The entire undertaking appears to be one of close cooperation by which duplication of effort is avoided, economy is practiced, and the results are utilized by many. It is expected that the experience in aerial surveys derived from the mapping of this tract may furnish valuable information that will be of service in solving some of the difficulties that prevent the examination of certain coastal tracts in other parts of Alaska. Many of these coastal tracts are traversable on foot only with great difficulty and at so high a cost that their survey is not warranted under present conditions.

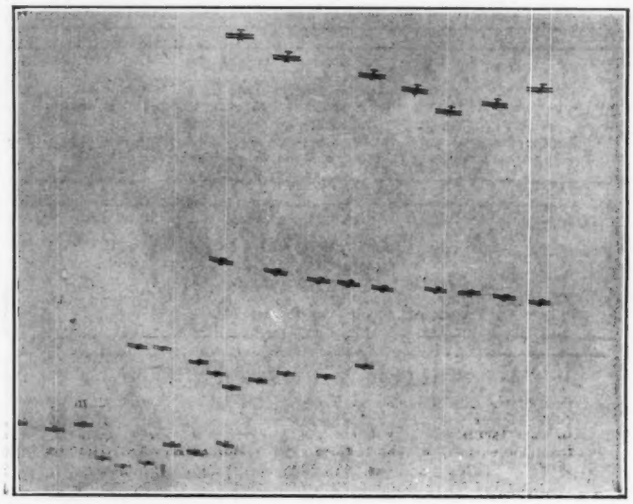
Naval Air Orders

Lt. H. V. Baugh det. Naval Air Station, Pensacola, Fla., to Aircraft Sqds. Battle Fleet.

Lt. R. H. Howard Ors. May 12, 1925, and mod. June 10 revoked to Nav. Air Sta., Anacostia, D. C.

Lt. Comdr. Stewart F. Bryant det. off. in chg. U. S. Helium Prod. Plant, Fort Worth, Tex.; to Naval Air Sta., Lakehurst, N. J.

Lt. M. P. Higgins det. U.S.S. S-28, to Naval Air Sta., Pensacola, Fla.



P. & A. Photo

Four bombing squadrons maneuvering at the R.A.F. Display

Lt. Comdr. Harold T. Bartlett det. Bu. Aero.; to Naval War College, Newport, R. I.

Lt. C. K. Fink ords. June 20 to U.S.S. Mayflower revoked to continue U.S.S. Shawmut.

Lt. Roy K. Jones det. inspr. of Naval Aircraft, Curtiss Aeroplane and Motor Corp., Garden City, L. I.; to command U.S.S. S-25.

Lt. Julian B. Noble unexpired delay cancelled. Ords. March 26, 1925, modified to temporary duty, Aircraft Sqdns., Battle Fleet, and upon completion to carry out remainder of orders.

Lt. J. O. Wood det. Bu. of S. & A.; to Naval Air Sta., Pensacola, Fla.

Marine Corps Air Orders

Lt. T. J. Cushman det. MB. Quantico, Va., to N.A.S., Pensacola, Fla.

Following officers det. M.B., Quantico, Va., to N.A.S., Pensacola, Fla.: 1st Lt. J. B. Neill, 2nd Lts. L. T. Burke, F. M. Fletcher, J. T. Harris, I. L. Kimes, F. H. Lampson-Scribner, W. C. Lemly, W. G. Manley, K. L. Moses, R. M. Rhoads, F. E. Sessions, Jr., W. J. Scheyer, W. B. Trundle, M. B. Twining, T. J. Walker, Jr., J. G. Walraven.

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Publisher's News Letter

The New York Times makes a very proper criticism of the delays at terminals of air transport in an editorial commenting on the first round-trip night air mail letter sent to Chicago and return by AVIATION. Under the heading "Much Time Lost at Terminals," it writes:

"There is justification for the claim of L. D. Gardner, the editor of AVIATION that this country now has the fastest mail service in the world, and that he proved it by sending a test letter from New York to Chicago and back again in just forty-two hours of elapsed time between mailing the letter here and its delivery here again.

"That is a fine piece of work, of course, but one notices that the time of actual flight was only sixteen hours. It took twenty-six hours to get that letter over the few miles between the flying fields and the points of mailing and delivery at the two ends. In other words, in the air mail service, as in almost everything else we do the problem of 'terminal distribution' still is unsolved both as to time and expense.

"That failure adds enormously to the 'spread' between the prices received by producers and those paid by consumers, notably in the matter of all foods, but almost as much in the merchandise of every sort. With airplanes as they now are, and requiring large fields from which to ascend and in which to descend, their points of starting and destination must be at considerable distances from cities, and to cover those distances much slower means of transportation must be used. Once in the air, the speed of these machines is far in excess of that of any other vehicle, but unfortunately they cannot either take or discharge their cargoes of passengers or freight close to the real points of departure or arrival."

* * * *

In a letter from Major Frank M. Kennedy he brings to our attention that all but one of the pioneers of Army flying are alive and with one exception are all on active duty in the Air Service. He writes: "It is an interesting thing to note from an historical point of view that of the six officers who formed the first Army Aviation School at College Park, Md., in July, 1911, (Chandler, Kirtland, Beck, Arnold, Milling and Kennedy) that all of them are still alive with the exception of Beck who was murdered, and with the exception of Chandler who is relieved, all of them are on active duty in the Air Service today." It is easy to overlook the men who by their foresight, and willingness to adopt flying as a profession when airplanes were of very primitive construction, have created a new military weapon. It is pleasant to record the pleasure everyone in aviation has when the fine work of these officers is remembered.

* * * *

It is significant to read that the Army has finally given up its desire for the Los Angeles and is resigned to its fate. There has always been a feeling in military circles that the idea of getting the Los Angeles from the Zeppelin company originated in the Air Service and that it should have its opportunity of training with the airship. But, Acting Secretary of War Davis has stated that the Army was satisfied to leave the fate of the airship with the Navy. The reason given is that all available funds should be applied to the purchase of airplanes for the Air Service. With the equipment of the Army as depleted as it was shown to be at the hearings of the Lampert Committee, the decision seems to be commendable. Then, too, the Bureau of Aeronautics has handled its aerostation (please note that we are trying to avoid the clumsy "heavier-than-air") with great credit to the Navy.

* * * *

A few months ago the amiable "Shorty" Schroeder was asked to take over the management of the Ford Airport and of flying for the new Ford Airlines. He wrote to AVIATION and asked that he be sent the names of pilots who might wish a job with the Ford outfit. A small notice to that effect was immediately published. Read what was the result as reported by the friend of more fliers than any man we know: "Regarding the number of inquiries received due to the box notice in AVIATION for pilots, let me say that, roughly 500 direct and about 200 indirect answers have been received due to the notice. Let me take this opportunity to thank you for the assistance."

It is gratifying to hear of such a splendid response to a small notice in AVIATION. Sometimes, publishers wonder whether the columns they edit are read by their readers carefully or just scanned. Such words of appreciation are greatly appreciated particularly at a time when the aeronautical papers are receiving such meager support from the aircraft manufacturers.—L.D.G.

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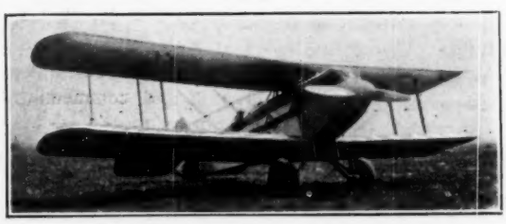

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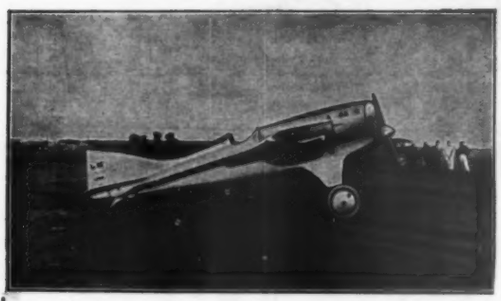

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INDEX TO ADVERTISERS

A

Advance Aircraft Co. ... 161
Aircraft Service Directory ... 166 - 167
Aircraft Supply Co. ... 167
Alexander Aircraft Co. ... 165
Anderson Aircraft Manufacturing Co. ... 166

C

Champion Spark Plug Co. ... 161
Classified Advertising ... 160
Curtiss Aeroplane & Motor Co., Inc. ... 142

D

Decatur Aircraft Co. ... 167

E

Elias & Bro., G. ... 161

G

Guggenheim, Daniel, School of Aeronautics ... 167

H

Hamilton Aero Mfg. Co. ... 166
Haskelite Mfg. Co. ... 167
Huff Daland Aero Corp. ... 166

I

Ireland, G. S. ... 166

J

Johnson Airplane & Supply Co. ... 143 - 167
Johnson Motor Products Co. ... 166

K

Kellett, Wallace, Co. ... 161

L

Lamblin, Etablissements ... 162
Learn to Fly ... 165
Loening Aeronautical Engineering Corp. ... 162
Logan, Floyd J. ... 165
Ludington Exhibition Co., Inc. ... 167

M

Martin, Glenn L., Co., The ... 163
Monumental Aircraft Co. ... 166

N

Northrop, Marvin A. ... 167

O

Oglaend, Inc., Jonas B. ... 165
Ostergaard Aircraft Works ... 166

P

Paragon Engineers, Inc. ... 166
Perry-Austen Mfg. Co. ... 165
Pioneer Instrument Co. ... 166
Polachek, Z. H. ... 166

R

Rinehart-Whelan Co. ... 167
Robertson Aircraft Corporation ... 160

S

Southern Airways Inc. ... 166
Spalding Construction Co. ... 166

T

Tips & Smith ... 167
Titanine, Inc. ... 165

V

Vought Corp., Chance ... 168

W

Warner, Edward P. ... 167
Where to Fly ... 158
Woodson Engineering Co. ... 166
Wright Aeronautical Corp. ... 144

Y

Yackey Aircraft Co. ... 166

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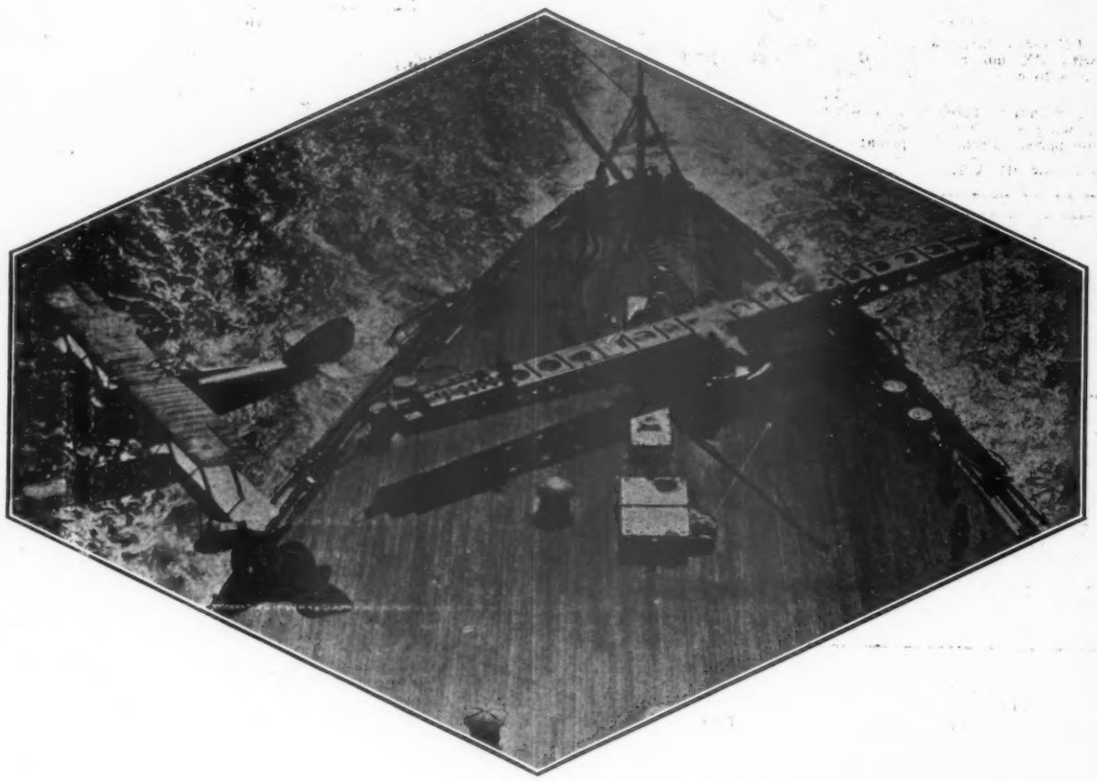

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